

REMARKS/ARGUMENTS

This Preliminary Amendment is filed concurrently with a Request for Continued Examination (RCE) in response to the final Office Action of July 2, 2008.

Claims 1–25 are pending in the application. The Office Action rejected Claims 1–25 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,519,857 to Proulx et al. (“Proulx”). Claim 4 has been canceled above, and new Claims 26–33 have been added.

Applicant thanks the Examiner for courtesies extended during the telephonic interview that took place on December 17, 2008. During the interview, new independent Claims 26, 30, and 32 were discussed with the Examiner in light of the cited reference. The Examiner indicated that the new claims included recitations that distinguished the claimed invention from the cited art.

In view of the Amendments and Remarks set forth herein, Applicants respectfully submits that the application is in condition for allowance.

The Claimed Invention

Independent Claim 1 relates to a cutting head comprising a passage for a cutter string and a movable locking element for locking the string between the locking element and a backing wall. A cross-section of the locking element taken transversely to the string presents at least one recess forming a longitudinal groove extending along the string, with contact being made between the locking element and the string at least on either side of the longitudinal groove. Claims 2, 3, and 5–14 depend from Claim 1 and thus incorporate all of the elements of Claim 1; Claim 4 has been canceled.

Independent Claim 15 relates to a cutting head that includes a passage for a cutter string and a moving element for locking the string. The moving element is suitable for locking string between itself and a backing wall and presents two rows of teeth separated by a central groove. Claims 16–25 depend from Claim 15 and thus incorporate all of the elements of Claim 15.

New independent Claims 26 and 28 correspond to Claims 1 and 15, respectively and further recite that the string is of square cross-section and that the backing wall has a V-shaped profile. Claims 26 and 28 are supported by the specification in at least Figures 10, 11, and 13.

This arrangement, where the profile of the backing wall is suited to the shape of the string, ensures that the backing wall better maintains the string in a given orientation. It further ensures that the teeth of the locking element effectively grip the two other sides of the string, for example as shown in Fig. 11 of the specification. New Claim 27 depends from new independent Claim 26 and thus incorporates all of the elements of Claim 26, and new Claim 29 depends from new independent Claim 28 and thus incorporates all of the elements of Claim 28.

New independent Claim 30 is directed to a cutting head that includes a movable locking element, wherein the locking element comprises a shoe that is movable in translation. Claim 30 is supported by the specification at least in Figure 9. New Claim 31 depends from new independent Claim 30 and thus incorporates all of the elements of Claim 30.

New independent Claim 32 corresponds to Claim 1, but further recites that the face of the locking element in contact with the string is generally parallel to the string. New Claim 32 is supported by the specification at least in Figure 9. New Claim 33 depends from new independent Claim 32 and thus incorporates all of the elements of Claim 32.

Rejection of Claims 1–25 under 35 U.S.C. § 103(a)

The Office Action rejected Claims 1–25 under 35 U.S.C. § 103(a) as being unpatentable in view of Proulx. Applicant respectfully submits that the rejection of Claims 1–25 is incorrect for the reasons given below.

As noted in the Office Action on page 2, paragraph 2, Proulx does not disclose that the cross-section of the line securement cams **16** taken transversely to the string presents at least one recess forming a longitudinal groove having different shapes extending along the string. However, Applicant respectfully disagrees with the Examiner that the shape of a groove in the cam is “a matter of obvious design choice.” In a toothed cam such as the one disclosed in Proulx, the goal is to minimize the surface of the contact between the teeth and the string in order to ensure that the teeth effectively bite into the string. *See, e.g.*, col. 8, lines 12–14 (“Continued pulling on the line causes the cam teeth **50** to dig into the line and prevent its withdrawal.”).

In the present application, the inventor has gone against this known principle in providing a greater surface of contact with the string. However, the invention provides a better retaining

effect because this greater surface of contact has been appropriately designed. For example, the longitudinal groove allows for the cross-section of the locking element to match the profile of the string. Furthermore, the edges of the teeth on the locking element are arranged transversely to the direction of the pulling force on the string, enabling the locking element to cooperate with the string, as shown, for example, in Fig. 9 of the present application.

In summary, Proulx does not teach or suggest a cutting head that includes a locking element, wherein a cross-section of the locking element taken transversely to the string presents at least one recess forming a longitudinal groove extending along the string, as recited in independent Claim 1. Furthermore, Proulx does not teach or suggest a cutting head including a moving element for locking the string, the head being characterized in that the locking element presents two rows of teeth separated by a central groove, as recited in independent Claim 15. Therefore, for at least the reasons described above, the rejection of Claims 1–25 is respectfully traversed.

New Claims 26–33

New Claims 26–33 are also patentable over the cited art for at least the reasons described above, as well as the reasons discussed below.

Regarding new Claims 30 and 31, Proulx discloses only a rotatable cam and does not render obvious the use of a locking element comprising a shoe that is movable in translation.

Regarding new Claims 32 and 33, Proulx does not teach or suggest a locking element wherein the face of the locking element in contact with the string is generally parallel to the string. Rather, in Proulx, the face of the rotatable cam **16** is arcuate, and the only teeth that effectively grip the string are those located in the portion of the face of the cam that is tangential to the string. Proulx teaches that “[t]o accommodate and secure the lengths **22** of the cutting line in place, the curvilinear end surfaces **51** on cams **16** are each preferably provided with at least five pointed teeth **50a–50e**, each tooth being spaced from an adjacent tooth or teeth by about 8° as illustrated in FIG. 4b” Col. 6, lines 20–24. The consequence is that the teeth located at both ends of the cam are not operative, and the number of teeth that do grip the string is smaller.

In contrast, in Claims 32 and 33, the face of the locking element that is in contact with the string is parallel to the string, as shown in Fig. 9. This arrangement ensures that all the teeth contribute to the gripping of the string. As a greater number of teeth grip the string, the retention of the string is improved.

Therefore, for at least the reasons described above, the new Claims 26–33 are patentable over the cited references.

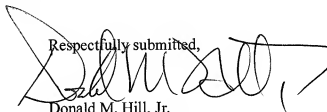
CONCLUSION

In view of the remarks presented above, it is respectfully submitted that independent Claims 1, 15, 26, 28, 30, and 32 and all the claims depending therefrom (*i.e.*, Claims 2, 3, 5-14, 16-25, 27, 29, 31, and 33) are in condition for allowance. It is respectfully requested that a Notice of Allowance be issued in due course. The Examiner is requested to contact Applicant's undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

The patentability of the independent claims has been argued as set forth above, and thus Applicant will not take this opportunity to argue the merits of the rejection with regard to specific dependent claims. However, Applicant does not concede that the dependent claims are not independently patentable and reserves the right to argue the patentability of dependent claims at a later date if necessary.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefor (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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